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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,634

10/07/2005

Martyn Vincent Twigg

JMYT-347US

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23122 7590 12/29/2006
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EXAMINER

NGUYEN, TU MINH

ART UNIT

PAPER NUMBER

3748

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/29/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/527,634

Applicant(s)

TWIGG ET AL.

Examiner

Tu M. Nguyen

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 13-21, 25, 30-34 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 13-21, 25, 30-34 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20061130</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Amendment filed on November 30, 2006 has been entered. Claims 1-3, 13-21, 25, 30-34, 36, and 38-40 have been amended. Overall, claims 1-3, 13-21, 25, 30-34, and 36-40 are pending in this application.

Claim Objections

2. Claim 40 is objected to because the claim is identical to claim 25. Therefore, claim 40 should be canceled in response to this Office Action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 3, 13, 14, 16-21, 25, 34, and 36-40 are rejected under 35 U.S.C. 102(a) as being anticipated by Schafer-Sindlinger et al. (PCT Publication No. WO 02/26379) (see U.S. Patent Application 2004/0065078 for the English equivalence).

Re claims 1, 34, 36, and 37, as shown in Figure 1, Schafer-Sindlinger et al. disclose a system and a process for operating said apparatus, the system comprising:

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- a diesel engine operable in a first, normal running mode (normal mode; see paragraph 0041) to produce exhaust gas, and operable in a second mode (regeneration mode; see paragraphs 0043 and 0044), which second mode produces an exhaust gas comprising an increased level of carbon monoxide (CO) relative to the exhaust gas produced in the first mode, wherein the second mode, a value of at least one measurable parameter (exhaust gas temperature; see paragraph 0020) indicative of a condition of the engine is outside a pre-determined range;

- means (fuel injector) to switch engine operation between the two modes (see paragraph 0043); and

- an exhaust system disposed downstream of the diesel engine for receiving the exhaust gas therefrom, the exhaust system comprising a catalysed component (1) comprising a substrate monolith comprising a palladium (Pd) catalyst supported on a first support material associated with at least one base metal promoter (first group of components comprises at least one platinum group metal and at least one oxygen storage component) and a platinum (Pt) catalyst associated with the supported Pd catalyst (second group of components comprises a support material and at least one platinum group metal) (see Abstract),

wherein the catalysed component (1) is catalysed soot filter having an oxidation catalyst (platinum) (see paragraph 0051).

Re claims 3 and 39, in the system of Schafer-Sindlinger et al., the substrate monolith further comprises a supported catalyst having an arrangement selected from a first layer (second group of components) comprising the Pt catalyst and a second layer (first group of components) overlying the first layer, which second layer comprising the supported Pd catalyst and the associated at least one base metal promoter;

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Re claim 13, the system of Schafer-Sindlinger et al. further comprises an engine control means, wherein the engine control means comprises an engine control unit (ECU) (not shown but inherently must have).

Re claim 14, in the system of Schafer-Sindlinger et al., the means for switching between the two modes switches between the first mode and the second mode when the temperature of the supported Pt catalyst is $< 250^{\circ}\text{C}$ (see paragraph 0020).

Re claims 16-18 and 20, in the system of Schafer-Sindlinger et al., the at least one base metal promoter is selected from a reducible oxide, wherein the at least one reducible oxide is selected from the group consisting of MnO_2 , Mn_2O_3 , Fe_2O_3 , SnO_2 , CuO , CoO , and CeO_2 (see the last 4 lines in paragraph 0034)

Re claim 19, in the system of Schafer-Sindlinger et al., the reducible oxide is dispersed on the Pd catalyst support material.

Re claim 21, in the system of Schafer-Sindlinger et al., the at least one base metal promoter is selected from one basic metal, wherein the at least one basic metal is selected an alkaline earth metal selected from the group consisting of barium, magnesium, calcium, and strontium (see paragraph 0034).

Re claims 25 and 40, in the system of Schafer-Sindlinger et al., the support material is selected from the group consisting of alumina, silica-alumina, ceria, magnesia, titania, zirconia, a zeolite, and mixtures, composite oxides or mixed oxides of any two or more thereof (see paragraph 0035).

Re claim 38, in the system of Schafer-Sindlinger et al., the Pt catalyst is supported on a second support material (aluminum oxide).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 15, 32 and 30, 31, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schafer-Sindlinger et al. as applied to claims 1 and 38, respectively, above, in view of legal precedent.

Re claim 2, the system of Schafer-Sindlinger et al. discloses the invention as cited above, however, fails to disclose that the engine is configured to produce exhaust gas comprising more than 2000 ppm CO when running in the second mode.

Schafer-Sindlinger et al. disclose the claimed invention except for specifying an optimum range of carbon monoxide concentration of more than 2000 ppm to regenerate the catalysed soot filter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of CO concentration, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 15, in the system of Schafer-Sindlinger et al., the Pd catalyst and the Pt catalyst are both disposed on the same support material (see paragraph 0035).

Re claims 30-33, the system of Schafer-Sindlinger et al. discloses the invention as cited above, however, fails to disclose that the catalysed component comprises from 30 to 300 gr/ft³ Pd and from 30 to 300 gr/ft³ Pt, a supported catalyst part of the catalysed component contains from 0.1 to 30.0% by combined weight of Pt and Pd based on the combined total weight of the supported Pd catalyst and the supported Pt catalyst, the supported catalyst part of the catalysed component contains a weight ratio of from 95:5 to 10:90 Pd :Pt, or the supported catalysts contain from 0.1 to 10% Pt by weight and from 0.1 to 20% Pd by weight based on the combined total weight of the supported catalysts.

Schafer-Sindlinger et al. disclose the claimed invention except for specifying an optimum range of Pt and Pd densities, percentage weight, and weight ratio. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of Pt and Pd densities, percentage weight, and weight ratio, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that Schafer-Sindlinger et al. fail to disclose or teach an engine operating in a second mode, which second mode produces an exhaust gas comprising an increased level of carbon monoxide (CO) relative to the exhaust gas produced in the first mode (pages 8-9 of the Applicant's Amendment), the examiner respectfully disagrees.

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As indicated in paragraph 0043, Schafer-Sindlinger et al. perform a regeneration mode to burn off the trapped soot in the catalysed soot filter (1). During this regeneration mode, an additional fuel is injected into each cylinder of the engine during the expansion or power stroke. The additional fuel is only partially burned during a post-combustion that takes place in the cylinders. This is due to the fact that a same level of oxygen existed in the exhaust gas during a combustion cycle of the two modes (normal and regeneration) of operation. It is clear that the partially burned additional fuel in the regeneration mode provides an extra amount of CO which is in addition to an amount of CO already present in the exhaust gas due to the combustion of an air fuel mixture injected early (i.e., before the expansion stroke).

Therefore, Schafer-Sindlinger et al. clearly disclose the claimed limitation in dispute.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Prior Art

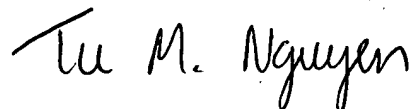
9. The IDS (PTO-1449) filed on November 30, 2006 has been considered. An initialized copy is attached hereto.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMN

December 21, 2006

Tu M. Nguyen

Primary Examiner

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